LEWIS RIVER, WASHINGTON.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With letter of the Chief of Engineers, report of a preliminary examination of Lewis River, Washington, from its mouth to Speliah Creek.

DECEMBER 22, 1892.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington, December 20, 1892.

SIR: I have the honor to inclose, herewith, a letter from the Chief of Engineers, dated December 19, 1892, together with a copy of a report from Maj. Thomas H. Handbury, Corps of Engineers, dated November 23, 1892, of a preliminary examination made by him, in compliance with the provisions of the river and harbor act of July 13, 1892, of Lewis River, Washington, from its mouth to Speliah Creek.

Very respectfully,

S. B. ELKINS,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 19, 1892.

SIR: I have the honor to submit herewith copy of report, dated November 23, 1892, of Maj. Thos. H. Handbury, Corps of Engineers, upon preliminary examination of Lewis River, Washington, from its mouth to Speliah Creek, made in compliance with the provisions of the river and harbor act approved July 13, 1892.

It is the opinion of Maj. Handbury, and of the division engineer, Col. G. H. Mendell, Corps of Engineers, that Lewis River is worthy of improvement from its mouth to Etna. I concur in this opinion.

The cost of a survey and the preparation of plans and estimates for the work is estimated at $500.

Very respectfully, your obedient servant,

THOS. LINCOLN CASEY,
Brig. Gen., Chief of Engineers.

Hon. S. B. ELKINS,
Secretary of War.

PRELIMINARY EXAMINATION OF LEWIS RIVER, WASHINGTON, FROM ITS MOUTH TO SPELIAH CREEK.

UNITED STATES ENGINEER OFFICE,
Portland, Oregon, November 23, 1892.

GENERAL: I have the honor to submit the following report upon a preliminary examination made of the Lewis River, Washington, from its mouth to Speliah Creek, called for by the river and harbor act approved July 13, 1892. This examination was made under my directions by Lieut. Harry Taylor, Corps of Engineers, U. S. Army, whose report is submitted herewith.

Lewis River is a tributary that empties into the Columbia River from the State of Washington, 14 miles below the mouth of the Willamette River. About 3 miles above its mouth it separates into two branches, known as the North Fork and the East Fork. The East Fork is the smaller of the two and heads a few miles to the eastward among the hills bordering the Columbia River. The North Fork heads farther to the northward and receives the drainage from a part of the slopes of Mount St. Helens and Mount Adams. In the early summer it is subject to a freshet from the melting snows of these mountains and in the winter from the rains.

The upper portion of this river, like all mountain streams, is characterized by a steep slope and swift current. From the mouth of Speliah Creek to mouth of Cedar Creek, at which is located a small town named Etna, the estimated distance is 12 miles and the estimated fall 55 feet, giving an average fall of about 4½ feet per mile. In this reach of the river and for 10 miles below Etna there is a succession of bars and pools, the frequency of the bars diminishing as we go downstream. There are no obstructions to be met with excepting these bars, and they can not be removed without lowering the water in the pools above and thus forming other bars. The depth of water on these at a low stage in the river is from 1 to 2 feet, with a channel generally not more than 50 feet wide. This portion of the river is not susceptible of improvement that would be of benefit to navigation except by means of lock and dam. Its commerce does not at this time warrant a work of this character, nor is there a prospective commerce that would justify it.

From Etna to the mouth of the river the slope is much less than above; steamboats at the higher stages of the water have gone up to this point and, were some snags moved and a few sand bars improved, light-draft boats could get to that place at all stages. At the present time during the low-water stage, steamers running from Portland ascend the river 3 miles to the forks. Freight and passengers are here transferred to a lighter-draft boat and carried 3 miles farther to Woodland. The reach between the forks and a point 3 miles above Woodland is very much obstructed by snags. Were these removed boats could then go to Etna. The entrance to the river from the Columbia is obstructed by a shoal bar which would be largely or wholly removed by closing a

chute by which a considerable part of the water is carried off to the Columbia.

If this river were improved so that boats could go to Etna it would be a great convenience to the people who are settling in the valley, would diminish the cost of getting their products to market and further assist in developing the country.

The commerce of the river during the last calendar year, as obtained from the most reliable sources of information, was, approximately, 10,000 tons freight and 14,000 passengers. In addition to this there was a large quantity of lumber brought out of this river. I have been unable to obtain a near approximation of the number of feet.

From this showing it appears that a small outlay by the Government in the improvement of this river from its mouth to Etna, a distance of 19 miles, would be beneficial to a considerable number of people. To this extent I consider the river worthy of improvement by the General Government, and estimate that the cost of surveying the river from Etna to its mouth and the preparation of plans and estimates for the improvement will be $500.

Very respectfully, your obedient servant,

THOS. H. HANDBURY,
Major, Corps of Engineers.

Brig. Gen. THOMAS L. CASEY,
Chief of Engineers, U. S. A.

(Through Col. G. H. Mendell, Corps of Engineers, Division Engineer, Pacific Division.)

[First indorsement.]

U. S. ENGINEER OFFICE,
San Francisco, Cal., November 25, 1892.

Respectfully forwarded to the Chief of Engineers, U. S. Army.

For reasons herein given, Lewis River, from its mouth to Etna, Wash., is recommended as worthy of improvement by the General Government.

G. H. MENDELL,
Colonel, Corps of Engineers, Division Engineer.

REPORT OF LIEUT. HARRY TAYLOR, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Cascade Locks, Oregon, September 24, 1892.

SIR: I have the honor to submit the following report of my examination of the Lewis River, Washington, from Speliah Creek to its mouth, made in compliance with your order of the 15th instant.

Lewis River empties into the Columbia about 14 miles below the mouth of the Willamette, or 25 miles from Portland, Oregon. Three miles above its mouth it separates into two branches, the North Fork and the East Fork. Speliah Creek runs into the North Fork about 28 miles from the junction of the two branches.

I took a steamer at Portland, which runs to the Lewis River and up as far as the forks. At the forks I changed to a small steamer that runs 3 miles up the North Fork to Woodland. From Woodland I went by wagon to Speliah Creek, and there took a row boat and returned in it to the forks of the river, when I again took the steamer to Portland.

I was informed by people living along the banks of the river that it was unusually low, and I therefore had a favorable time for seeing it.

From Speliah Creek down to within about 3 miles of Woodland the Lewis River is almost entirely free of snags and overhanging trees. It has a general width of from 100 to 150 feet and is a succession of deep still pools and shallow gravelly bars, over which the water runs with a swift current. In the first 12 miles below Speliah Creek there are no less than 31 of these gravelly bars. Almost all the fall in the

river is at these bars. The fall at the various bars varies from 6 inches to 7 feet, and the distance in which this fall occurs varies from 75 feet to half a mile, but as a rule the fall is from 1 foot to 2 feet in a distance of from 50 to 100 yards. The total length of river covered by these bars in these 12 miles is approximately 2¼ miles, and the total fall 55 feet.

The lower ends of the bars are almost always of a steep slope and run diagonally from one bank to the other. The water runs over this slope all along from one side of the river to the other, gradually concentrating toward the bank at which is the upper part of the lower end of the bar and near to which the channel is generally found. At the stage at which the river was, when I visited it, almost all the water in the river ran through this channel. The water in the channel varied from 1 foot to 2 feet, and the width of the channel was generally not more than 50 feet. The current over these bars was very swift. With a rise of 2 feet in the river there would appear to be no obstruction to a steamboat ascending this part of the river except the naturally extremely swift current due to the great fall. At the lower stage navigation might possibly be helped by wing dams at a few of the worst bars, but at most of them the river is contracted as much in the natural channel as would ever be desirable.

Twelve miles below Speliah Creek is Etna. From Etna down for 10 miles the character of the river is much the same as between Speliah Creek and Etna, except that the gravel bars are much fewer and have less fall, and the pools are larger. About 10 miles below Etna or 3 miles above Woodland the character of the river changes. From this point to the mouth the banks are sandy or muddy, the gravel bars change to sand bars, and the river is full of snags. If the snags were removed and a few short wing dams put in to straighten and deepen the channel on the sand bars, this part of the river could be easily and safely navigated. The entrance to the Lewis River from the Columbia River is obstructed by a shoal sand bar, but this difficulty would be largely or wholly removed by closing a chute by which a considerable part of the water from the Lewis River is drawn off to the Columbia. Just above this chute is a boom operated by the Lewis River Boom Company, and through the chute logs are floated to the main boom in the Columbia.

The steamer that runs from Portland is unable to ascend farther than the forks of the river on account of snags in the channel. This makes a transfer of the freight and passengers necessary, an operation which takes time and necessarily increases the cost of transportation. A second steamer had just started running from Woodland to Portland; she made her first trip up the day before I was in Woodland. She ran a snag through her hull before she got out of the Lewis River on her first trip.

The country around Woodland is a good farming country, and large quantities of hay and potatoes are shipped to market. The principal industry up the Lewis River has been lumbering, but the lumber is being rapidly cleared off and farms are growing along the valley. I was informed at Speliah Creek that there were more than 100 settlers farther up the river than that. The freight on ordinary merchandise to Speliah Creek from Woodland depends upon the condition of the roads, and runs from 75 cents per hundred up. If steamboats could run regularly up to Etna this rate would be very much reduced, for, besides giving water transportation more than half way, the worst part of the roads, which are between Woodland and Etna, would be avoided.

The Lewis River is crossed by three ferries with overhead wire ropes. One of these is at Woodland, one about half a mile above Woodland, and the third at Etna. The line of the railroad from Portland to The Sound, which crosses the Columbia near Vancouver, Wash., crosses the Lewis River about 1 mile from its mouth. This road has been partially graded, but at present no work is being done on it.

In view of the great benefit the improvement of the Lewis River would confer on the people in its vicinity and the small cost of the improvement, it is respectfully recommended as "worthy of improvement" from its mouth to Etna.

I was promised a statement by the Lewis River Transportation Company of the freight and passengers carried by them, but I have not yet received it.

Very respectfully, your obedient servant,

HARRY TAYLOR,
First Lieutenant of Engineers.

Maj. THOS. H. HANDBURY,
Corps of Engineers, U. S. A.